

WHAT IS CLAIMED IS:

1. A color corrector of a flat panel display, comprising:
a look-up table storing a plurality of conversion distance information obtained by matching nine divided subareas for color coordinates of received
5 image signals with divided subareas for reference color coordinates and corrected values for the image signals; and
a color correction unit converting the image signals by converting the conversion distance information by using interpolation, and extracting the corrected values depending on the converted image signals to correct the image
10 signals.
2. A method of color correction for a flat panel display using a color corrector of the flat panel display for correcting image signals in broadcasting standard into image signal for driving the flat panel display, the method comprising:
15 (a) extracting gray values for apexes on reference color coordinates for received image signals ;
(b) comparing the gray values for the reference color coordinates of the standard broadcasting image signals and the reference color coordinates of the flat panel display, dividing the color coordinates into nine subareas using an areal
20 division, matching the divided subareas with divisional areas of the reference color coordinates, and extracting a conversion distance information; and
(c) correcting the received standard broadcasting image signals by converting the conversion distance information using interpolation, and outputting image signals for driving the flat panel display.
- 25 3. The method of claim 2, wherein the areal division comprises:
(d) extracting line segments from a white point of the color coordinate to apexes of the reference color coordinates, and line segments from the white point of the color coordinate to internal divisions where extensions from the apexes meet the line segments of the reference color coordinates;
30 (e) extracting line segments from the white point of the color coordinates to points where the two gray values become maximum;

(f) extracting line segments from the points P, Q and S on the color coordinates where the two gray values become maximum to the apexes R, G and B of the reference color coordinates; and

(g) dividing the area of each reference color coordinate into the nine
5 subareas having boundaries of the extracted line segments.

4. The method of claim 2, wherein the conversion distance information includes a gray value distance for line segments from apexes of the reference color coordinates to points where the gray values become maximum, and a gray value distance for line segments from internal divisions where extensions from
10 white points of color coordinates to the apexes meet the line segments of the reference color coordinates to the apexes of the reference color coordinates.

5. The method of claim 2, wherein the interpolation comprises:

(h-1) calculating R_i' , G_i' and B_i' for the coordinate values of the image signals R_i , G_i and B_i using an equation:

$$15 \quad (R_i', G_i', B_i') = (R_i - \min(R_i, G_i, B_i), G_i - \min(R_i, G_i, B_i) - \min(R_i, G_i, B_i));$$

(h-2) calculating K using an equation:

$$K = \frac{\text{MaxG}}{\max(R_i', G_i', B_i')};$$

(h-3) calculating converted values R_i'' , G_i'' and B_i'' using an equation:

$$(R_i'', G_i'', B_i'') = (K \times R_i', K \times G_i', K \times B_i'),$$

20 where the converted value R_i'' , G_i'' and B_i'' include 0, the maximum gray, and a number t which is neither 0 nor the maximum gray.

(h-4) calculating converted values R_o'' , G_o'' and B_o'' including 0, the maximum gray and a value for the gray values on the corresponding areas for the nine subareas depending on t forming the converted values R_i'' , G_i'' and B_i'' ,
25 the value obtained by one among:

$$\left\{ t - \text{MaxG} \times \frac{n1}{m1 + n1} \right\} \times \frac{b}{a}, \quad (4)$$

where t is a number among R_i'' , G_i'' and B_i'' except for 0 and the maximum gray, and m1, n1, a and b are the predetermined conversion distance information;

$$t \times \frac{f}{e}, \quad (5)$$

where t is a number among R_i'' , G_i'' and B_i'' except for 0 and the maximum gray,
and e and f are the predetermined conversion distance information; and

$$t \times \frac{c}{b} + \text{MaxG} \times \frac{n2}{m2 + n2}, \quad (6)$$

where t is a number among R_i'' , G_i'' and B_i'' except for 0 and the maximum gray,
5 and a , b , $m2$ and $n2$ are the predetermined conversion distance information; and

(h-5) calculating the gray values R_o , G_o and B_o of the image signals for
driving the flat panel display using an equation:

$$\begin{aligned} & (R_o, G_o, B_o) \\ &= \frac{(R_o'', G_o'', B_o'')}{K} + (\min(R_i, G_i, B_i), \min(R_i, G_i, B_i), \min(R_i, G_i, B_i)). \end{aligned}$$